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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/853,174	05/10/2001	Johan Cornelis Talstra	NL000262	5915

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EXAMINER

POLTORAK, PIOTR

ART UNIT PAPER NUMBER

2134

DATE MAILED: 03/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/853,174

Applicant(s)

TALSTRA ET AL.

Examiner

Peter Poltorak

Art Unit

2134

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 March 2006.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 10-22 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-7 and 10-22 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The Amendment, and remarks therein, received on 03/01/06 have been entered and carefully considered.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior office action.

Response to Amendment

3. Applicant's arguments have been carefully considered but they were not found persuasive.
4. Applicant recites the MPEP paragraph 706.07 (a) detailing when a Final Rejection is proper on second action. However, applicant stopped short on one paragraph recitation, and it is not clear whether the statement should be read as though applicant alludes that the final rejection was not warranted.

Applicant continues with an argument that limitations of originally filed claims 4-8, and in particular the limitation referring to linear feedback shift register (*LFSR*) over Galois Field was never made during the prosecution.

5. The examiner points out that not only the first set of claims were significantly amended by the set of claims received on 5/13/05 but also, the rejection used in the subsequent Final Office action mailed out on 1/03/06 was over the original art of record cited in the action mailed 1/13/05.
3. Furthermore, paragraphs 28-29 in the first Office Action mailed on 1/13/05 clearly addressed the limitations of originally filed claims 4-8, including the limitation referring to linear feedback shift register (*LFSR*) over Galois Field.

4. However, applicant cancelled claims 8 and 9 due to the Office Action mailed on 7/25/05 and as a result these claims were not addressed in the Final Office action mailed out on 12/27/05. In order for applicant to have an opportunity to be advised on the status of claims 8 and 9 (currently new claims 21 and 22) claims 1-7 and 10-22 are addressed in the current Office Action.
5. As per applicant's main argument that the examiner is reading the wobble groove within Bloom et al. as being the physical mark and that "it is impossible for Bloom et al. to anticipate the rejected claims because the subject matter for the second signal but no physical mark is detected is not disclosed or suggested by Bloom et al.", the examiner points applicant to paragraphs 12-15 in the last Office Action.
6. As per claims 10 and 11 applicant alleges that apparatus that uses multiple groups with multiple keys is not the same as apparatus that comprise a key detection algorithm that is used to select the key and to decode from which group of keys said key was selected.
7. Applicant's arguments have been carefully considered but they were not found persuasive.

The examiner points out that claims 10 and 11 were dependent on claims 8-9 (currently claims 21-22) that were previously rejected under 35 USC § 112 rejection, and the metes and bounds of the claims have not been clearly established. As a result, claims 10 and 11 have been addressed as best understood.

Furthermore, the applicant's argument is unpersuasive because in order to use any key, the system that comprises multiple groups with multiple keys, must first address the particular key and this means that it must specify to which group the key belongs. Since the apparatus is a computer system and keys are represented by the software (which is implemented by computer algorithms) and not hardware, the selection of keys is achieved by a key detection algorithm.

8. As per claim 12 applicant argues that Sedgewick does not suggest an examining process that takes the form of going down a binary tree, where going left is caused by projection-value 0 and right by projection in value non-zero.
9. The examiner points out that Sedgewick was merely used as an example of the commonly used and well-known data structure and tree traversal methodology. Sedgewick explicitly teaches an examining process that takes the form of going down a binary tree, where going left is caused by projection of a first value and right by projection of a second value (*see pg. 35-163 for example*). Although Sedgewick does not explicitly teach that the first value is 0 and the second value is not 0, binary operations utilize only two values 0 and non 0 (1). Thus, having an option of selecting 0/1 or 1/0 for moving left/right or right/left down the binary tree is simply inherent and selecting one versus another option is obvious barring unexpected results.
10. Claims 1-7 and 10-22 have been examined.

and 10-12 **Claim Rejections - 35 USC § 112**

11. Claims 21-22~~1~~ are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that applicant regards as the invention.
12. Claim 21 is not understood. The limitation "its output is biased by interpreting emitted symbols '0'..'s-n-1' as 'unencrypted' and 's-n'...'s-1' as 'encrypted' is not clear. For purposes of further examination the phrase is treated as though bits other than 0's represent encryption.
13. The phrase: "the second signal is embedded in the first signal by selecting a key" in claim 22 is not understood. It is not clear how it is possible to embed a signal by selecting a key from groups of other keys. For purposes of further examination the phrase is treated as "the second signal is encrypted with a key".
14. Claims 10-12 are dependent on claim 22 thus due to the lack of clarity of claim 22 the relevance of claims 10-12 in regard to claim 22 is not understood.

Claim Rejections - 35 USC § 102

The following is a quotation of 35 U.S.C. 102(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

1. Claims 1-3, and 13-20 are rejected under 35 U.S.C. 102(a) as being anticipated by *Bloom et al.* (*Bloom, J.A.; Cox, I.J.; Kalker, T.; Linnartz, J.-P.M.G.; Miller, M.L.; Traw,*

*"Copy protection for DVD video", C.B.S.Proceedings of the IEEE , Volume: 87 ,
Issue: 7 , July 1999 Pages:1267 - 1276).*

2. *Bloom et al.*'s invention is directed to copy protection for DVD using watermarking (*Title and an Abstract*). *Bloom et al.* teach that watermarking is a technique for hiding information directly in video (*Bloom et al.*, pg. 1269 col. 1).
3. As per claims 1-3, 13-19 *Bloom et al.* teach an embedded watermark within DVD content that reads on a second signal logically embedded in a first signal.
4. *Bloom et al.* teach a wobble with a 64 bits payload in DVD-ROM disks (*Bloom et al.*, pg. 1275 col.1) that reads on a physical mark for storing at least part of the information on the information carrier.
5. *Bloom et al.* teach evaluation of the watermark information and the wobble information and only if the two (*information bits*) match playback is allowed (*Bloom et al.*, pg. 1275, col. 1).

This reads on refusing play back of the information read from the information carrier if the second signal but no physical mark has been detected.

6. Also from the above it is clear that each single (incorrect) bit of the second signal (watermark payload) triggers an action. For example, the single incorrect bit triggers the refusal of the playback. As a result the second signal as disclosed by *Bloom et al.* includes "a single bit trigger".
7. Claims 4-7, 10-11 and 21-22 are rejected under 35 U.S.C. 103 (a) as being unpatentable over *Glogau et al.* (*International Pub. No. WO 99/11020*) in view of *Bloom et al.* (*Bloom, J.A.; Cox, I.J.; Kalker, T.; Linnartz, J. -P.M.G.; Miller, M.L.;*

Traw, "Copy protection for DVD video", C.B.S.Proceedings of the IEEE ,Volume: 87 , Issue: 7 , July 1999 Pages:1267 - 1276) and Wirtz (U.S. Patent No. 5940134).

8. *Glogau et al.* teach the second signal being embedded in the first signal by encoding it in a pseudo-random noise pattern of encrypted and unencrypted packs of the first signal, wherein the encryption sequence generated is based on a linear feedback shift register (*pg. 2 lines 14-17*).
9. *Glogau et al.* do not teach a physical mark used for storing at least part of the information on the information carrier and refusing playback of the information read from the information carrier if the second signal but no physical mark has been detected.
10. *Bloom et al.* teach a physical mark used for storing at least part of the information on the information carrier and refusing playback of the information read from the information carrier if the second signal but no physical mark has been detected as discussed above and *Wirtz* provides a motivation to combine (*Abstract and col. 2 lines 43-47*).
11. It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to incorporate a physical mark used for storing at least part of the information on the information carrier and refusing playback of the information read from the information carrier if the second signal but no physical mark as taught by *Bloom et al.* in *Glogau et al.*'s invention. One of ordinary skill in the art would have been motivated to perform such a modification in order to ensure that the information preventing an illegal playback of the content is not lost when a disk is copied.

12. *Glogau et al.* in view of *Bloom et al.* do not explicitly teach the linear feedback shift register (*LFSR*) being over Galois Field. However, pseudo-random numbers generate 1s and 0s, which appear fairly random, but after certain times the numbers repeat, and for the purposes of security the interest is to extend the time of this repeat to as long as possible. The choice of a minimal and irreducible polynomial function (*such as Galois*) which gives a long time period without the repeat would have been obvious to one of ordinary skill in the art given that they are well known and barring any unexpected results.
13. As per claims 4-7 *Bloom et al.* teaches that the second signal is embedded in the first signal by encoding it in a pseudo-random noise pattern of encrypted and unencrypted packs of the first signal, wherein the encryption sequence generated is based on a linear feedback shift register.
14. *Glogau et al.* teach the second signal being embedded in the first signal by encoding it in a pseudo-random noise pattern of encrypted and unencrypted packs of the first signal, wherein the encryption sequence generated is based on a linear feedback shift register (*pg. 2 lines 14-17*).
15. As per claim 21, in the XOR function 1s are ignored and 0s influence the result, which reads on “and its output is biased by interpreting emitted symbols ‘0’... ‘s-n-1’ as ‘unencrypted and ‘s-n’... ‘s-1’ as ‘encrypted’.
16. *Glogau et al.*, *Bloom et al.* and *Wirtz* teach the apparatus as discussed above.
17. As per limitation 22 (as best understood) *Glogau et al.*, *Bloom et al.* and *Wirtz* do not explicitly teach embedding the second signal in the first signal by selecting a key for

at least partly encrypting the information from one of at least two groups of keys.

Official Notice is taken that it is old and well-known practice to protect data signals by encrypting the data signals using encryption keys. It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to embed the second signal in the first signal by selecting a key for at least partly encrypting the information from one of at least two groups of keys. One of ordinary skill in the art would have been motivated to perform such a modification in order to protect the second signal from being altered.

18. As per claim 10 *Glogau et al.* in view of *Bloom et al.* and *Wirtz* do not explicitly teach selecting the key from one of at least two groups of keys. Official Notice is taken that it is old and well-known practice to have more than one key available in a system (*e.g. Taguchi et al., U.S. Patent No. 5915025 teach multiple groups with multiple keys, col. 23 lines 16-29 and Fig. 25*). One of ordinary skill in the art at the time of applicant's invention would have been motivated to employ more than one key in order to provide more flexibility and compatibility for encryption using systems. In the multiple key systems selecting a key from one of at least two groups of keys is implicit.

19. As per claim 11 computers project all information to n-bit numbers (0s and 1s) to accommodate a particular processor used in the computers.

20. As per claim 12 *Glogau et al., Bloom et al.* and *Wirtz* do not explicitly teach that said examining process takes the form of going down a binary tree, where said going left is caused by projection-value 0 and right by projection in value non-zero. However,

Official Notice is taken that the examining process of the form of going down a binary tree, and 0/1 or 1/0 for moving left/right or right/left is old and well-known in the art of computing (*e.g. Robert Sedgewick, "Algorithms", second edition, 1998, ISBN: 0201066734, pg. 35-163*), and it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to do so given the benefit of implementing proven methodology.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Poltorak whose telephone number is (571)272-

3840. The examiner can normally be reached Monday through Thursday from 9:00 a.m. to 4:00 p.m. and alternate Fridays from 9:00 a.m. to 3:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Morse can be reached on (571) 272-3838. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


3/17/06


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